REMARKS

Claims 1-8, 15-21, 23 and 25 are pending in this application. By this Amendment, claims 1, 5, 6, 15 and 18 are amended, and claims 22 and 24 are canceled without prejudice to, or disclaimer of, the subject matter recited therein. Support for the amendments to claims 1 and 15 can be found at least in Figure 12, and the corresponding description in the specification. Claims 5, 6 and 18 are amended for form. No new matter is added.

I. Claims 5, 6 and 18 Satisfy Formal Requirements

Claims 5, 6 and 18 are objected to for informalities. By this Amendment, claims 5, 6 and 18 are amended in response to the objection. Thus, claims 5, 6 and 18 satisfy formal requirements. Withdrawal of the objection is thus respectfully requested.

II. The Claims Define Patentable Subject Matter

A. Rejection of Claims 1-7, 15-20, 22 and 24

Claims 1-7, 15-20, 22 and 24 are rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,695,439 to Takahashi (Takahashi '439) in view of U.S. Patent No. 5,512,793 to Takeuchi et al. (Takeuchi). The rejection of canceled claims 22 and 24 is moot, and the rejection of claims 1-7 and 15-20 is respectfully traversed.

Takahashi '439 and Takeuchi, alone or in combination, do not teach or render obvious an actuator unit that includes "a plurality of individual electrodes that have been sintered on a surface of the piezoelectric element at positions corresponding to the respective pressure chambers, and that are arranged in two intersecting arrangement directions, and a plurality of dummy electrodes ... spaced from an outermost one of the individual electrodes in each of the two intersecting arrangement directions in a respective outward direction from the plurality of individual electrodes," as recited in independent claim 1 (emphasis added). Further, neither Takahashi '439 nor Takeuchi teaches or renders obvious "a plurality of individual electrodes that have been sintered on a surface of the piezoelectric element at positions corresponding to the respective pressure chambers, and that are arranged in two

intersecting arrangements directions, and one or more sintered dummy electrodes at positions other than positions corresponding to the pressure chambers and that are ... spaced from an outermost one of the individual electrodes in each of the two intersecting arrangement directions of the plurality of individual electrodes, in a respective outward direction from the plurality of individual electrodes," as recited in independent claim 15 (emphasis added).

The Office Action acknowledges that Takahashi '439 does not disclose dummy electrodes. Further, Takeuchi does not remedy the above-described deficiencies of Takahashi '439.

The Office Action alleges that the electrodes 76 of the displacement adjusting layers 60 of Takeuchi correspond to the dummy electrodes, and when combined with Takahashi, would achieve the ink-jet head shown in "Drawing A" on page 5 of the Office Action. However, Takeuchi only discloses that the electrode 76 is merely disposed next to a side of the outermost electrode 70. Further, the alleged combination shown in Drawing A merely shows an ink-jet head, where each alleged dummy electrode is formed above or below an outermost electrode in the column, and thus is merely disposed next to a side of an outermost electrode. Therefore, neither Takeuchi nor the alleged ink-jet head shown in Drawing A teaches dummy electrodes or sintered individual electrodes that are spaced from an outermost one of the individual electrodes in each of the two intersecting arrangement directions, as recited in independent claims 1 and 15, respectively.

Thus, for at least these reasons, independent claims 1 and 15 are patentable over Takahashi '439 and Takeuchi. Further, claims 2-7 and 16-20, which depend from claims 1 and 15, are also patentable over Takahashi '439 and Takeuchi for at least the reasons discussed above, as well as for the additional features they recite. Withdrawal of the rejection is thus respectfully requested.

B. Rejection of Claims 8 and 23

Claims 8 and 23 are rejected under 35 U.S.C. §103(a) over U.S. Patent No. 5,266,964 to Takahashi et al. (Takahashi '964) in view of U.S. Patent No. 6,174,051 B1 to Sakaida (Sakaida '051). The rejection is respectfully traversed.

Takahashi '964 and Sakaida '051, alone or in combination, do not teach or render obvious "a plurality of sintered members of the same residual stress characteristics as the individual electrodes at positions other than positions corresponding to the pressure chamber and that are, ... arranged adjacent to each other so as to surround the plurality of individual electrodes arranged adjacent to each other in a matrix," as recited in independent claim 8 (emphasis added).

The Office Action asserts that the interior negative electrodes 42 of Takahashi '964 correspond to the claimed plurality of sintered members and the interior positive electrodes 44 corresponds to the claimed plurality of individual electrodes. However, Takahashi '964 does not disclose a plurality of sintered members that are arranged adjacent to each other so as to surround the plurality of individual electrodes arranged adjacent to each other in a matrix, as recited in independent claim 8. As shown in Figures 1 and 4 of Takahashi '964, the interior negative electrodes 42 (a-d) are not arranged adjacent so as to surround the interior positive electrodes 44. "Surround" is understood to mean encircle or to confine on all sides. As shown in Figures 1 and 4 of Takahashi '964, the interior negative electrodes 42 do not confine the interior positive electrodes 44 on all sides. The interior negative electrodes 42 are merely positioned on the left and right sides of the interior positive electrodes 44. Thus, Takahashi '964 does not disclose members that are adjacent to each other so as to surround the plurality of individual electrodes as recited in independent claim 8.

Further, Sakaida '051 does not remedy the above-described deficiencies of Takahashi '964. Sakaida '051 is only cited by the Office Action for its alleged teaching of a common electrode.

Thus, for at least these reasons, claim 8 is patentable over Takahashi '964 and Sakaida '051. Further, claim 23, which depends from claim 8, is also patentable over Takahashi '964 and Sakaida '051, for at least the reasons discussed above, as well as for the additional features it recites. Withdrawal of the rejection is thus respectfully requested.

C. Rejection of Claims 21 and 25

Claims 21 and 25 are rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,979,077 B2 to Sakaida (Sakaida '077) in view of Takeuchi. The rejection is respectfully traversed.

Sakaida '077 and Takeuchi, alone or in combination, do not teach or render obvious "a plurality of sintered dummy electrodes at positions other than positions corresponding to each of the plurality of pressure chambers and that are, on the surface of the one of the plurality of piezoelectric elements, arranged adjacent to each other so as to surround the plurality of individual electrodes arranged adjacent to each other in a matrix," as recited in independent claim 21 (emphasis added).

The Office Action acknowledges that Sakaida '077 does not disclose a plurality of sintered dummy electrodes, as recited in claim 21. Further, Takeuchi does not remedy the deficiencies of Sakaida '077.

The Office Action alleges that the electrodes 76 of the displacement adjusting layers 60 of Takeuchi correspond to the claimed dummy electrodes, and when combined with Takahashi, would achieve the ink-jet head shown in "Drawing B" on page 14 of the Office Action. However, as discussed above, Takeuchi only discloses that the electrode 76 is merely disposed next to a side of the outermost electrode 70. Further, the alleged combination shown

in Drawing B merely shows sintered dummy electrodes added directly next to a side of the last row of the actuator unit of Sakaida '077. Thus, neither Takeuchi nor the alleged ink-jet head shown in Drawing B teaches dummy electrodes that are arranged adjacent to each other so as to surround the plurality of individual electrodes, as recited in independent claim 21.

Thus, for at least these reasons, independent claim 21 is patentable over Sakaida '077 and Takeuchi. Further, claim 25, which depends from claim 21, is also patentable over Sakaida '077 and Takeuchi for at least the reasons discussed above, as well as for the additional features they recite. Withdrawal of the rejection is thus respectfully requested.

III. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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Attachment:
Request for Continued Examination

Date: October 22, 2008

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